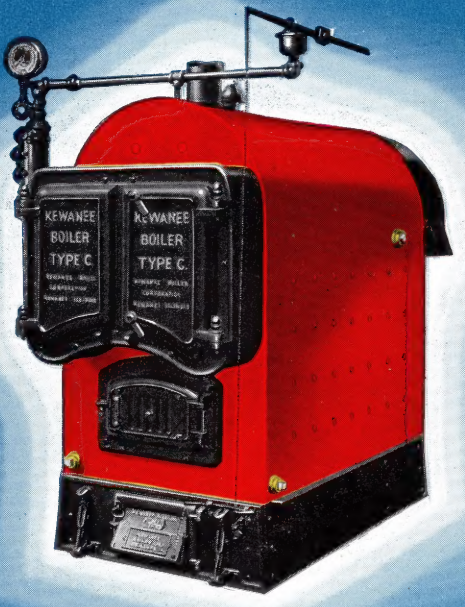
KEWANEE

TYPE C

BOILER

CATALOG 84



A HIGHLY PERFECTED STEEL HEATING BOILER SERIES

A. I. A. FILE No. 30C1

KEWANEE STEEL

KEWANEE presents in this catalog its recent series of steel heating boilers of the more compacted shape. This particular design of boiler is not new in itself—a basic patent having been taken out in 1873—but several modifications have been brought to the front during the last few years in an attempt to fill a definite demand in the heating business for a boiler of limited bulk which may be adapted to restricted accommodations.

The Kewanee Boiler Corporation has developed some processes of manufacture through the adoption of which the inherent weaknesses of earlier models on the market have been overcome and Kewanee improvements now make it permissible to sponsor this line of the fore-shortened type of boiler fortified with the guarantee of the Kewanee name.

Type C boiler is built to the A. S. M. E. Code for low pressure heating boilers, it is a *real* boiler in construction—a scientifically designed steam generator:—

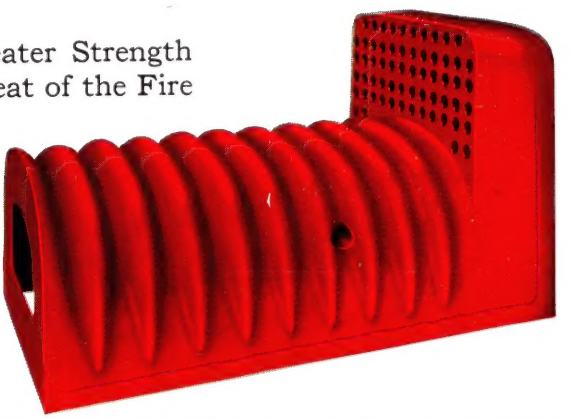
The furnace has extra width and height. In the smokeless type an arch is arranged to promote complete combustion. The space is proportioned to handle the expanded volume of the products of combustion.

Long travel back and forth for the flue gases prevents them escaping up the stack at too high a temperature.

The water content is ample to absorb all the useful heat without undue disturbance, and rapid circulation sweeps the steam bubbles through FREE WATER WAYS provided by improved design. The water line remains steady.

Another improved factor keeps the top flues under the water line—in other makes the water line would be 3 or 4 inches higher under like conditions. In Type C, the disengaging area is unbroken. There is no priming and the liberation of steam is unimpeded. The steam space above has unusual height to insure a continuous flow of dry steam into the heating system.

CORRUGATED CROWN SHEET has Much Greater Strength and More Heating Surface Concentrated where the Intense Heat of the Fire is put to Most Effective use for Quick Steaming.



KEWANEE TYPE C BOILERS all have corrugated crown sheets. This is a feature improvement in the heating boiler field evolved exclusively by Kewanee. Its practical value is not equalled by any other development on the market. In fact its application to the heating boiler firebox is one of the outstanding accomplishments in the past decade of steel boiler building.

The main advantages of the corrugated crown sheet are obvious:—

More heating surface is placed exactly where that surface is most effective in transmitting the radiant heat of the blazing fire to the water in the boiler. Quick steaming results from this greater heat absorption.

Corrugating gives much greater strength to resist the crushing effect of steam pressure; that means fewer stay bolts are needed. This extra strength makes it possible for the crown sheet to be installed right-side-up instead of inverted, as has been usual in this style of boiler. That superseded practice of inverting the crown sheet is objectionable in that mud and sediment collect in the bagged bottom where the greatest heat is applied, and there is very *ineffective* heating surface around the dead corner pockets at the top edges where soot is deposited from the fire on one side and circulation of water is interfered with on the other side.

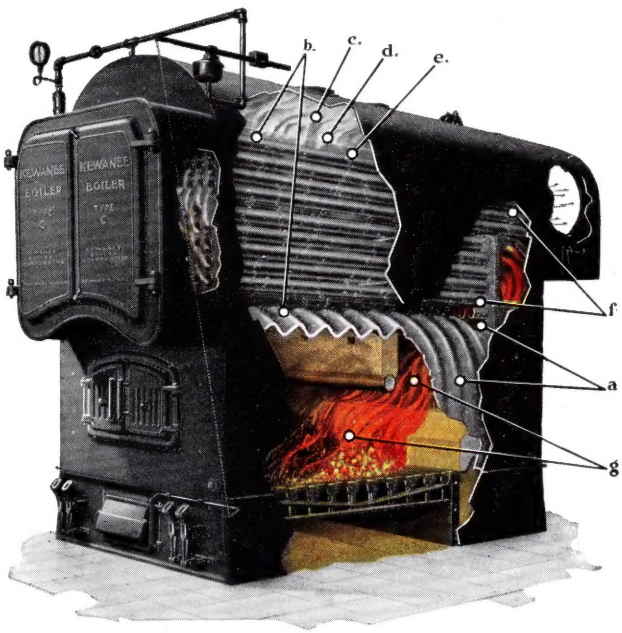
The corrugated arched crown sheet installed right-side-up as in the Kewanee Type C boiler gives greater height for better combustion . . . . . is self draining and cleaning . . . . . the sediment falls to the bottom of the water legs away from the hottest zone where it may readily be washed out.

Another advantage of the corrugated surface is the ease with which it takes up expansion from the heat of the furnace and contraction caused by the rush of cold air when fire door is opened. The sinuous curves of the corrugations help to break-up and dislodge any scale which might tend to adhere to the crown sheet.

The corrugations of the crown sheet, the wide water legs and the large taper rounded corners at the top of the *One-Piece Rear Combustion Chamber* draw a larger water volume to protect the hottest parts, make for more and easier circulation and consequently insure better steaming.

BOILER *Electric-Weld* TYPE C

DESIGN AND CONSTRUCTION CHARACTERISTICS



TYPE C For Coal Hand-Fired

to Heat 2200 to 35,000 Sq. Ft. of Equivalent Direct Radiation
Nos. 774–790 with Smokeless Header; 2773–2790 Direct Draft

Type "C" Boilers may be fitted at factory with Kewanee Indirect Hot Water Heating Coils at extra cost.

EQUIPMENT—Base fully assembled with Heavy Rocking (or Dumping) Grates, Cast Iron Front Panel includes Balanced Draft Flap on Ash Pit Door; Four Cast Iron Corner Posts; Heavy Steel Flanged Panels, Rear Cleanout Opening with Cover Plate except 36″ boilers; Refractory Bridgewall and Header Filler; Insulated Flue Door; Firedoor with Liner; Smokebox Soot Cleanout Doors. Firing Tools consist of Hoe, Poker, Slice Bar and Tube Scraper.

Trimmings for Steam Boiler—Water Column with Water Gauge and two or three Compression Gauge Cocks; Steam Gauge with Syphon and Cock; Pop Safety Valve (or valves); and Automatic ARCO Draft Regulator with Lever, Weight, Chain and Pullies. No trimmings of any kind furnished with water boilers.

Foundation: Weight of boiler is supported on four corner posts of the base. Footings may be required, depending on soil conditions. Covering: Outside insulation material not furnished by K. B. Corp. 100 lbs. of magnesia will cover 25 sq. ft. of surface 1″ thick.

Material:

The component parts consist of only seven simple shapes compacted together so as to limit the bulk and shorten the seams.

Flange steel plate, extra thickness is used. Tensile strength 55,000 to 65,000 pounds per square inch. This boiler plate is of homogeneous quality with high ductility and low carbon content (not exceeding 0.20%) as required for sound arc fusion welds.

Construction:

The requirements of the A. S. M. E. Code for low pressure heating boilers are fully complied with.

In building Type C boilers there is applied all the skill in manufacture and all the approved procedure evolved by expert boiler makers throughout forty years of continuous practical experience. Fanciful and untried kinks are eliminated and a high degree of workmanship is assured with no unnecessary shop expense.

Contact surfaces on door castings are ground to dust-proof finish.

Performance:

Positive proof of actual performance beyond the specified duty is to be found in the figures derived from extended tests on the Type C boiler series made at Kewanee Boiler Corporation laboratory under practical operating conditions. The knowledge gained from this research has been so well applied in the design that the completed product carries handily all radiation loads up to the full catalog rating **plus**, for each size, with high efficiency.

Backing:

The name **KEWANEE** means as much on the new type C boiler as it has meant for over half a century on all Kewanee boilers. That is, the dependable heating service of Type C boilers is guaranteed by Kewanee.

Design:

Distribution of the materials of construction is so arranged to concentrate most of the effective heating surface around the hot fire zone with a consequent quick transfer of more heat to the water.

a. The water content is sub-divided so that there is ample volume at all the hottest parts, and aided by the header all the water is kept in active circulation, sweeping steam bubbles from the heating surfaces as fast as they are formed thus permitting the absorption of more of the useful heat of combustion.

b. Although the circulation is rapid it is so orderly that the water level remains steady. There is no danger of a dry crown sheet. No moisture or slugs of water are carried over into the steam main.

c. With the high and wide steam space which is provided, there is plenty of room for a reserve supply of dry steam.

d. The disengaging area at the surface of the water line is unbroken and is large enough to prevent priming which otherwise might be caused by crowding the expanded bubbles at the moment steam is liberated.
In other makes the flues interfere with the liberation of steam as the water line is artificially lowered below the upper flues which in consequence cannot even make steam.

e. But in the Type C boiler the top rows of flues are under water, all the flues are effective in making steam.

f. Grouping the flues in banks not only permits free circulation of water all around them, but it also offsets any tendency for sediment to become deposited and lodged thereon. The expanded gases are thoroughly strained through these nests of flues so that as much heat as possible is sifted out during their travel to and fro their full length.

g. In order to promote perfect combustion, there is extra width and height both in the furnace and in the rear combustion chamber. This gives time for enough air to penetrate the fuel and mingle with the products of combustion. An arch is arranged to deflect any unburnt gases over the glowing fuel bed at the rear. In this way combustion is completed and smoke is eliminated at all loads.

Uniform Rating—"Type "C" Boilers conform with Steel Heating Boiler Institute Code for Rating Low Pressure Boilers and the Industry Simplified Practice Recommendation."

Type C rating is Total Radiation Load at boiler outlet expressed in equivalent surface of cast iron radiators emitting 240 units of heat or B. T. U.'s per square foot per hour for Steam, at 2 lbs. pressure and 150 B. T. U. for Water at 180 degrees temperature. Total Radiation Load corresponds with the estimated design load which is the sum of 3 items—

1. Normal heat emission of connected radiation required to heat the building to 70 degrees.
2. Maximum heat required for water heaters and other apparatus.
3. Heat emission of all mains and piping connections.

Provided the stack and breeching connections are in accordance with the manufacturer's specification, each Type C Boiler will carry all the radiation load listed as its capacity, and in addition will easily handle large overloads with long firing periods and with low stack temperatures.

KEWANEE STEEL BOILER Electric-Weld TYPE C

SPECIFICATIONS AND DATA
for coal hand-fired

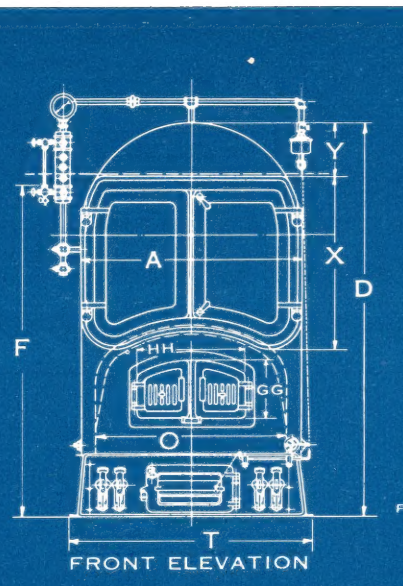
BOILER NUMBER	WITH ARCH		774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790
	WITHOUT ARCH	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790
CODE WORD STEAM BOILER*	— 700 SERIES		CESLE	CESLF	CESLG	CESLH	CESLI	CESLJ	CESLK	CESLL	CESLM	CESLN	CESLO	CESLP	CESLQ	CESLR	CESLS	CESLT	CESLU
	—2700 SERIES	CUSLD	CUSLE	CUSLF	CUSLG	CUSLH	CUSLI	CUSLJ	CUSLK	CUSLL	CUSLM	CUSLN	CUSLO	CUSLP	CUSLQ	CUSLR	CUSLS	CUSLT	CUSLU
RATING—STEAM RADIATION . . . . . SQ FT		2200	2600	3000	3500	4000	4500	5000	6000	7000	8500	10000	12500	15000	17500	20000	25000	30000	35000
—WATER RADIATION . . . . . SQ. FT.		3520	4160	4800	5600	6400	7200	8000	9600	11200	13600	16000	20000	24000	28000	32000	40000	48000	56000
—BTU. PER HOUR . . . . . 1000'S		528	624	720	840	960	1080	1200	1440	1680	2040	2400	3000	3600	4200	4800	6000	7200	8400
HEATING SURFACE S.H.B.I. MIN. . . SQ. FT.		158	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
GRATE AREA S.H.B.I MIN. . . . . SQ. FT.		8.9	9.7	10.5	11.4	12.2	13.4	14.5	16.4	18.1	20.5	22.5	25.6	28.4	30.9	33.2	37.4	41.2	44.7
WIDTH OF BOILER . . . . . IN.		36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
LENGTH OF BOILER . . . . . IN.		50	56	62	72½	70½	78½	86	86½	101	92	107½	110½	119½	111½	126½	143½	136½	157½
OVERALL HEIGHT, FLOOR TO TOP OF SHELL IN.		77½	77½	77½	77½	83½	83½	83½	86½	86½	99	99	108½	112	118	118	122	135	135
OVERALL WIDTH BOILER . . . . . IN.		38	38	38	38	44	44	44	50	50	56	56	62	68¼	74¼	74¼	80¼	86½	86½
OVERALL LENGTH OF BOILER . . . . . FT. IN.		5–10½	6–4½	6–10½	7–9	7–10½	8–6½	9–2	9–4½	10–7	9–11	11–2½	11–6½	12–3½	12–1½	13–4½	14–9½	14–2½	15–11½
HEIGHT OF WATER LINE . . . . . IN.		69	69	69	69	72	72	72	73	73	85	85	94	95	101	101	103	114	114
SHIPPING WEIGHT	— 700 SERIES. . . . LBS		3900	4400	5000	5500	6000	6500	7500	8400	9700	11000	12900	14900	16600	18400	22000	25200	28400
	—2700 SERIES . . . . LBS.	3400	3800	4300	4800	5300	5800	6300	7200	8100	9400	10600	12500	14400	16100	17900	21200	24400	27500
LENGTH OF FIREBOX . . . . . IN.		43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
WIDTH OF FIREBOX . . . . . IN.		30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
HEIGHT OF FIREBOX . . . . . IN.		26	26	26	26	29	29	29	30	30	34	34	36	38	40	40	42	42	42
STEAM SUPPLY SIZE . . . . . IN.		6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
RETURN INLET SIZE. . . . . IN.		3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	6	6	6
WATER HEATER CONNECTION SIZE . . IN.		2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
SAFETY VALVE SIZE . . . . . IN.		1½	2	2	2	2	2	2½	2½	2½	3	3	2–2	2–2½	2–2½	2–2½	2–2½	2–3	2–3
BREECHING DIAMETER, ONE BOILER . IN.		19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
STACK DIAMETER, ONE BOILER . IN.		15	16	16	17	18	19	20	21	22	24	26	28	29	31	33	36	38	40
MIN. HEIGHT OF STACK, ONE BOILER . FT.		45	50	50	55	55	55	60	60	65	65	70	70	75	75	80	95	95	110
BREECHING DIAMETER, TWO BOILERS. IN.		23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
STACK DIAMETER, TWO BOILERS. IN.		21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	52
MIN. HEIGHT OF STACK, TWO BOILERS . FT.		55	60	60	65	65	65	70	70	75	75	80	80	85	85	90	105	105	120
OUTSIDE SURFACE TO COVER ** . . . SQ. FT		63	69	76	87	94	103	112	120	137	150	172	193	220	223	248	292	307	348

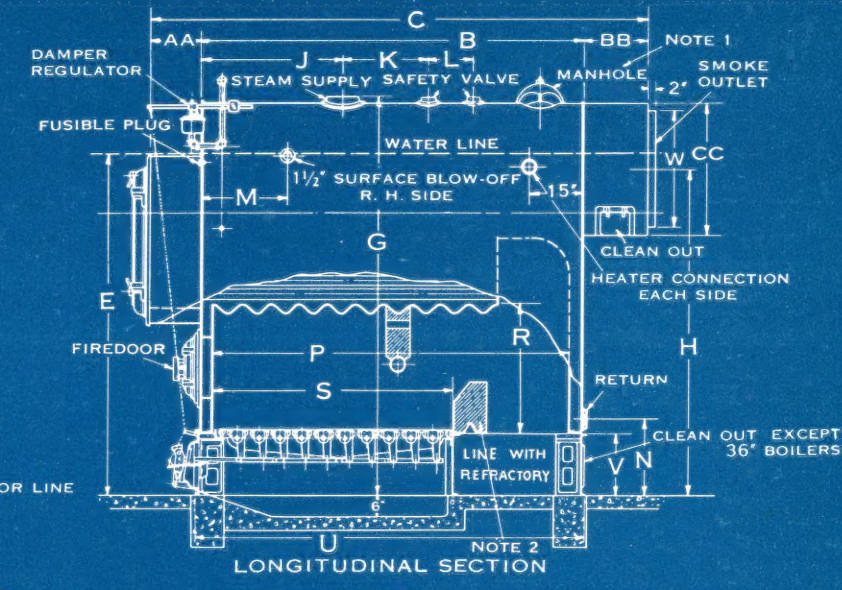
TYPE "C" BOILERS CONFORM TO THE A. S. M. E. BOILER CONSTRUCTION CODE FOR 15 LBS., AND FOR RATING WITH THE S. H. B. I. SIMPLIFIED PRACTICE.

BOILERS 774-790 WITH SMOKELESS ARCH AND DRUM ARE FOR USE WITH HIGH-VOLATILE BITUMINOUS COAL;
Nos. 2773-2790 WITHOUT ARCH ARE DIRECT DRAFT FOR USE WITH SMOKELESS FUELS SUCH AS LOW-VOLATILE BITUMINOUS COAL. COKE OR ANTHRACITE

*FOR WATER BOILER CODE WORD CHANGE THIRD LETTER S IN STEAM CODE WORD TO W.
EXAMPLES: CESLE FOR STEAM BECOMES CEWLE FOR WATER
CUSLU FOR STEAM BECOMES CUWLU FOR WATER

**FRONT SMOKEBOX AND FRONT HEAD BELOW SMOKEBOX NOT INCLUDED.





KEWANEE STEEL BOILER

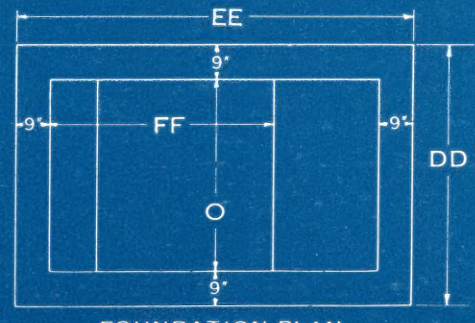
Electric-Weld

TYPE C

Numbers 774 to 790
with Smokeless Arch and Drum

Numbers 2773 to 2790
without Arch and Drum

Section showing setting and foundation

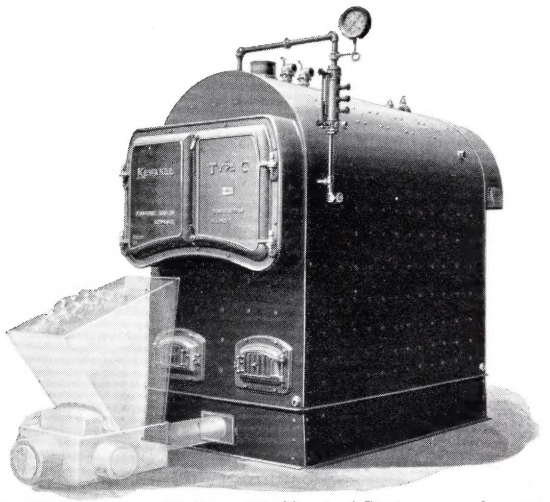


SETTING AND BOILER MEASUREMENTS

for coal hand-fired

BOILER NUMBER — WITH ARCH / WITHOUT ARCH		774 / 2773	775 / 2774	776 / 2775	777 / 2776	778 / 2777	779 / 2778	780 / 2779	781 / 2780	782 / 2781	783 / 2782	784 / 2783	785 / 2784	786 / 2785	787 / 2786	788 / 2787	789 / 2788	790 / 2789
A—BOILER WIDTH	IN.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—BOILER LENGTH	FT. IN.	4-2	4-8	5-2	6-0½	5-10½	6-6½	7-2	7-2½	8-5	7-8	8-11½	9-2½	9-11½	9-3½	10-6½	11-11½	11-4½	13-1½
C—BOILER LENGTH OVERALL	FT. IN.	5-10½	6-4½	6-10½	7-9	7-10½	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-1½	13-4½	14-9½	14-2½	15-11½
D—BOILER HEIGHT OVERALL	IN.	77½	77½	77½	77½	83½	83½	83½	86½	86½	99	99	108½	112	118	118	122	135	135
E—WATER LINE	IN.	69	69	69	69	72	72	72	73	73	85	85	94	95	101	101	103	114	114
F—WATER COLUMN HEIGHT	IN.	65½	65½	65½	65½	68	68	68	70	70	81	81	90	92	97½	97½	99½	110½	110½
G—STEAM SUPPLY HEIGHT	IN.	79½	79½	79½	79½	85½	85½	85½	88½	88½	101	101	110½	114	120	120	124	137	137
H—SMOKE OUTLET HEIGHT ABOVE FLOOR	IN.	64½	64½	64½	64½	69	69	69	70	70	81½	81½	90½	93	96	96	99	110	110
J—STEAM SUPPLY LOCATION	IN.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—SAFETY VALVE LOCATION	IN.	8½	10	10	10	10	10	11	14	14	13	14	14	14	14	14	14	14	15
L—2ND SAFETY VALVE LOCATION	IN.												12	15	12	10	11	11	12
M—SURFACE BLOW-OFF LOCATION	IN.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—RETURN HEIGHT	IN.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—FIREBOX AND ASH PIT WIDTH	IN.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
P—FIREBOX LENGTH	IN.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—FIREBOX HEIGHT	IN.	26	26	26	26	29	29	29	30	30	34	34	36	38	40	40	42	42	42
S—GRATE LENGTH	IN.	43	49	55	55	50	56	62	62	68	68	74	74	74	74	80	80	80	86
T—BASE WIDTH	IN.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—BASE LENGTH	IN.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—BASE HEIGHT	IN.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—SMOKE OUTLET DIAMETER	IN.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—FRONT SMOKEBOX HEIGHT	IN.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—FRONT SMOKEBOX TOP TO BOILER TOP	IN.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—FRONT SMOKEBOX DEPTH	IN.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—REAR SMOKEBOX DEPTH	IN.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—REAR SMOKEBOX HEIGHT	IN.	26	26	26	26	29	29	29	31½	31½	35	35	36	39	43	43	45½	49½	49½
DD—FOUNDATION WIDTH	IN.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—FOUNDATION LENGTH	IN.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
FF—LENGTH OF ASH PIT	IN.	35½	41½	47	51	45	51	57	57	63	63	69	70	70	70	76½	76½	76½	82½
GG X HH—FIRE DOOR OPENING	IN.	ONE 11 x 16				ONE 12 x 20			ONE 15 x 23		ONE 16 x 30			ONE 16 x 36			TWO 15 x 23	
FIRE DOOR STYLE		SINGLE FRAME AND DOOR									SINGLE FRAME AND DOUBLE DOORS				R&L SINGLE FR.&DR			

NOTE 1: MANHOLE FURNISHED ON BOILERS 782, 2782 AND LARGER. NOTE 2: BRIDGEWALL OMITTED IN BOILERS 2773; 774, 2774; 775, 2775.



Type C Hi-Firebox Boiler with Typical Stoker attachment Numbers 7L73 to 7L90—to Heat 2680 to 42500 Sq. Ft.

KEWANEE STEEL BOILER

Electric-Weld TYPE C

FOR COAL, OIL, GAS OR STOKER FIRING

The question what fuel to use may be paramount for the users of other makes of boilers but not so for the purchaser of Type C.

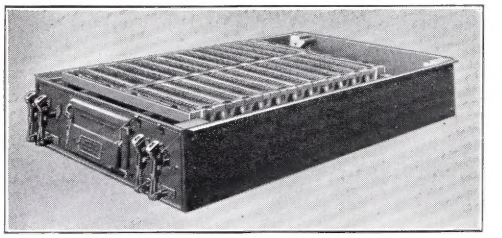
The owner of a Kewanee Compact Style Heating Unit has no difficulty with any fuel. The most available will serve best. Even a change-over from one fuel to another presents no complications.

With this wide adaptability in reserve, the customer may choose any of the solid Fuels in various grades. Bituminous or Anthracite Coals for Hand Firing or with modern Stoker feed attachments. Powdered coal, briquettes, coke or processed fuels may be provided for.

For Liquid Fuel any oil burner on the market will perform at its best with Type C.

Wherever Gaseous Fuel is practicable, Natural Gas or the manufactured and synthetic varieties have been used for years with outstanding results under Kewanee Boilers. Those performances are not mere claims. The highly economical results are deduced from careful observations in elaborate tests.

FOR COAL HAND-FIRED



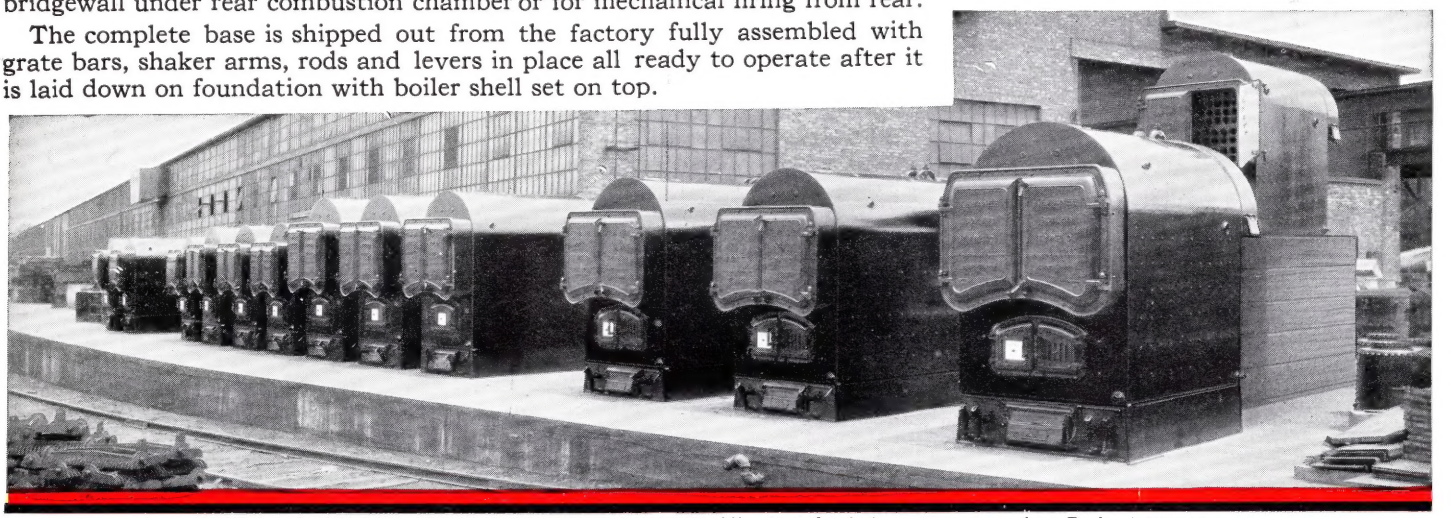
BASE GOES INTO BASEMENT ALL READY ASSEMBLED

Type C base consists of four substantial cast iron corner posts which take the weight of the boiler. The front plate is cast iron with balanced draft door and hinged frame which swings open to facilitate cleaning out the ash pit.

The sides and back are heavy steel plate flanged over at top to hold boiler cover and for additional strength at bottom also as shown in cut above. On Oil, Gas and Stoker Boilers the **front base panel** is **Steel** with opening.

Opening at rear has removable cover plate to permit cleaning out back of bridgewall under rear combustion chamber or for mechanical firing from rear.

The complete base is shipped out from the factory fully assembled with grate bars, shaker arms, rods and levers in place all ready to operate after it is laid down on foundation with boiler shell set on top.



Type C Boilers 774 to 784 on loading platform. The 4 styles below cover complete Series 774-790

Nos. 774 to 776 | Nos. 777 to 781 | Nos. 782 to 787 | Nos. 788 to 790 | Rear View

KEWANEE STEEL BOILER

Electric-Weld

TYPE C

EQUIPMENT—Base with four cast-iron corner posts, heavy steel panels flanged top and bottom, cleanout opening front and rear with cast-iron cover plate; fire-door(s), frame and liner(s); refractory lined flue door(s) and frame; smokebox and soot cleanout doors, tube scraper. But special plates for mounting burners and for dampered hearth openings, also firebrick lining and hearth angles not furnished by K. B. Corp.

Trimmings for Steam Boiler—Water column with water gauge and three (or 2) compression gauge cocks; steam gauge with syphon and cock; pop safety valve(s). No trimmings of any kind furnished with water boilers.

DIRECT DRAFT
For Oil and Gas or Stoker Firing

Numbers 1773 to 1790—
to Heat 2680 to 42,500 Sq. Ft. of
Equivalent Direct Radiation

THE same predominant qualities which make the Kewanee Type C Boiler so well adapted for burning coal, apply just as emphatically in making this boiler suitable for burning oil and gas, or for stokers.

Extensive tests have been carried on in the laboratory at Kewanee during the last ten or more years with the purpose of developing ideal conditions as to boiler settings, furnace requirements, etc., for burning oil or gas with satisfactory results under all types and sizes of Kewanee boilers when equipped with leading commercial oil and gas burners.

In view of the remarkably high efficiencies attained in numerous instances, we feel that Kewanee is well qualified to offer these recommendations to customers regarding the methods of installing burners of recognized standing for either front or rear firing. The foundation and setting plans detailed on the blue plates which accompany the tables of dimensions on following pages reflect our experience not only from tests but also from years of experience.

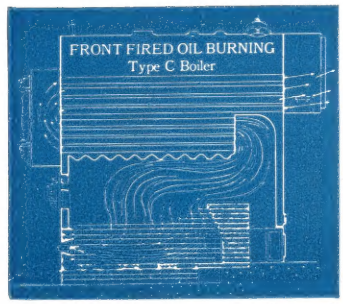
It has become an axiom with experts in heating that "if you burn oil and expect to get steam, you must have a boiler that will steam just as well with coal or any other fuel." That is precisely what the Type C steel boiler will do. It will give very high figures for efficiency with any kind of fuel.

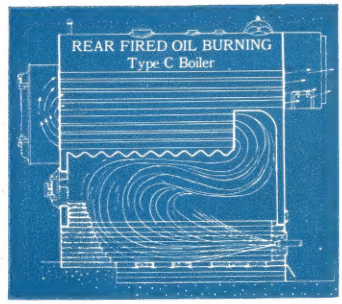
And whatever fuel may be under consideration, the purchaser is sure of an economical "buy" in the Kewanee Type C steel boiler. That is to say the first cost will be moderate and the upkeep cost which includes both fuel bill and repairs will be low. Every dollar expended for fuel will produce a high percentage of heat units.

The strong steel plate construction consisting of simple shapes compactly united by the electric-weld method is done in the same shops where the well known Kewanee boilers have been made for over 60 years. This is a guarantee that nothing is skimped in workmanship on Type C boilers.

The well balanced features which make Type C a real boiler, designed on the scientific principles enumerated on previous pages, of the coal burning section in this catalog, also hold good for the oil burning boiler, proving its ability to fulfill a definite demand in the heating business for a boiler of minimum advisable dimensions for handling the load for which it is rated.

Type C Oil Burning Boiler Settings—Front or Rear Fired
Diagrams detailed on pages 9 and 10





KEWANEE STEEL BOILER *Electric-Weld* TYPE C

SPECIFICATIONS AND DATA
for oil, gas or stoker

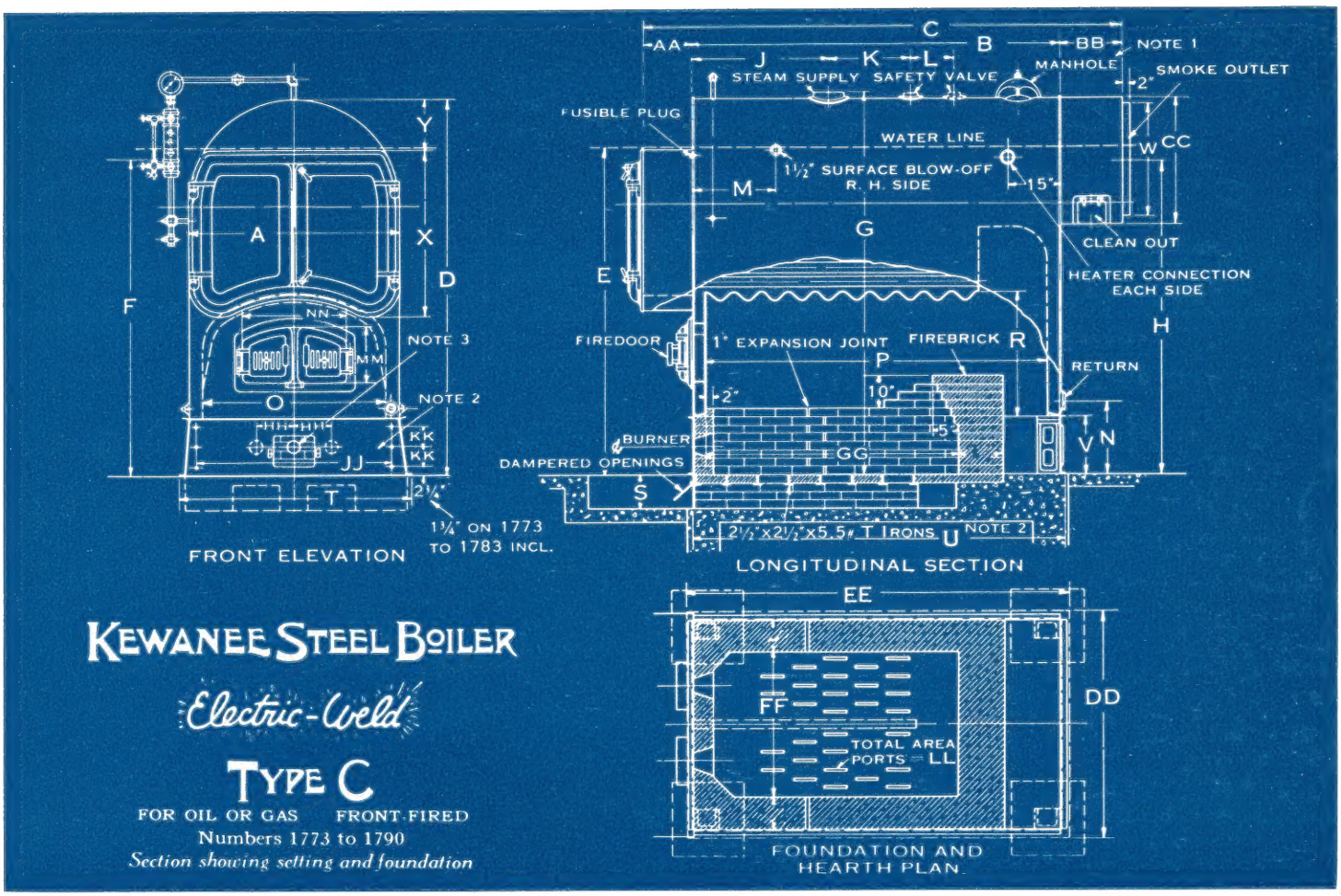
BOILER NUMBER	OIL OR GAS	1773	1774	1775	1776	1777	1778	1779	1780	1781	1782	1783	1784	1785	1786	1787	1788	1789	1790
	STOKER	0773	0774	0775	0776	0777	0778	0779	0780	0781	0782	0783	0784	0785	0786	0787	0788	0789	0790
CODE WORD STEAM BOILER*	OIL OR GAS	COSLD	COSLE	COSLF	COSLG	COSLH	COSLI	COSLJ	COSLK	COSLL	COSLM	COSLN	COSLO	COSLP	COSLQ	COSLR	COSLS	COSLT	COSLU
	STOKER	CASLD	CASLE	CASLF	CASLG	CASLH	CASLI	CASLJ	CASLK	CASLL	CASLM	CASLN	CASLO	CASLP	CASLQ	CASLR	CASLS	CASLT	CASLU
RATING—STEAM RADIATION . . . . . SQ. FT.		2680	3160	3650	4250	4860	5470	6080	7290	8500	10330	12150	15180	18220	21250	24290	30360	36430	42500
—WATER RADIATION . . . . . SQ. FT.		4280	5050	5840	6800	7770	8750	9720	11660	13600	16520	19440	24280	29150	34000	38860	48570	58280	68000
—BTU. PER HOUR . . . . . 1000'S		643	758	876	1020	1166	1313	1459	1750	2040	2479	2916	3643	4373	5100	5830	7286	8743	10200
HEATING SURFACE S. H. B. I. MIN. . . . SQ. FT.		158	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
FURNACE VOLUME S. H. B. I. MIN. . . . CU. FT.		19.2	22.6	26.1	30.4	34.8	39.1	43.5	52.1	60.8	73.8	86.8	108.5	130.2	151.8	173.5	216.9	260.3	303.6
NET FURNACE VOLUME, OIL-GAS . . . . . CU. FT.		25.6	28.9	30.9	36.5	46.8	50.6	54.4	62.8	73.1	88.2	98.3	126.0	160.8	181.8	200.2	251.4	284.1	320.2
FIREBOX VOL. ABOVE MUD RING . . . . . CU. FT.		21.0	23.2	25.3	29.2	37.9	41.8	45.5	56.0	64.6	77.0	88.7	107.9	138.9	149.2	167.7	216.6	226.6	258.2
AVERAGE FIREBOX HEIGHT, SEE NOTE 4 . IN.		27.9	27.0	26.3	25.4	28.5	28.0	27.6	28.8	28.2	32.7	32.0	34.5	36.5	38.4	37.7	39.2	40.3	39.5
PLAN AREA . . . . . SQ. FT.		9.1	10.3	11.5	13.8	15.9	17.9	19.8	23.4	27.5	28.2	33.3	37.5	45.7	46.7	53.4	66.3	67.5	78.5
WIDTH OF BOILER . . . . . IN.		36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
LENGTH OF BOILER . . . . . IN.		50	56	62	72½	70½	78½	86	86½	101	92	107½	110½	119½	111½	126½	143½	136½	157½
OVERALL HEIGHT, FLOOR TO TOP OF SHELL IN.		77½	77½	77½	77½	83½	83½	83½	86½	86½	99	99	108½	112	118	118	122	135	135
OVERALL WIDTH BOILER . . . . . IN.		38	38	38	38	44	44	44	50	50	56	56	62	68¼	74¼	74¼	80¼	86½	86½
OVERALL LENGTH OF BOILER . . . . FT. IN.		5-10½	6-4½	6-10½	7-9	7-10½	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-1½	13-4½	14-9½	14-2½	15-11½
HEIGHT OF WATER LINE . . . . . IN.		69	69	69	69	72	72	72	73	73	85	85	94	95	101	101	103	114	114
SHIPPING WEIGHT . . . . . LBS.		2900	3300	3700	4100	4600	5000	5400	6100	6900	8000	9100	10700	12300	13800	15400	18100	20900	23400
LENGTH OF FIREBOX . . . . . IN.		43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
WIDTH OF FIREBOX . . . . . IN.		30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
HEIGHT OF FIREBOX . . . . . IN.		26	26	26	26	29	29	29	30	30	34	34	36	38	40	40	42	42	42
STEAM SUPPLY SIZE . . . . . IN.		6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
RETURN INLET SIZE . . . . . IN		3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	6	6	6
WATER HEATER CONNECTION SIZE . . IN.		2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
SAFETY VALVE SIZE . . . . . IN.		1¼	2	2	2	2	2	2½	2½	2½	3	3	2-2	2-2½	2-2½	2-2½	2-2½	2-3	2-3
BREECHING DIAMETER, ONE BOILER . . IN.		19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
STACK DIAMETER, ONE BOILER . . IN.		15	16	16	17	18	19	20	21	22	24	26	28	29	31	33	36	38	40
MIN. HEIGHT OF STACK, ONE BOILER . . FT.		35	35	40	45	40	45	50	50	60	55	65	65	70	65	75	90	80	100
BREECHING DIAMETER, TWO BOILERS . IN.		23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
DIAMETER OF STACK, TWO BOILERS . IN.		21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	52
MIN. HEIGHT OF STACK, TWO BOILERS . FT.		45	45	50	55	50	55	60	60	70	65	75	75	80	75	85	100	90	110
NUMBER OF FIRE BRICK REQUIRED FOR OIL OR GAS		290	320	335	380	450	470	490	500	560	610	640	770	850	920	960	1050	1220	1300
OUTSIDE SURFACE TO COVER ** . . . SQ. FT.		75	81	88	99	109	118	127	137	155	173	194	219	249	258	283	329	347	388

TYPE "C" BOILERS CONFORM TO THE A. S. M. E. BOILER CONSTRUCTION CODE FOR 15 LBS., AND FOR RATING WITH THE S. H. B. I. SIMPLIFIED PRACTICE.

*FOR WATER BOILER CODE WORD CHANGE THIRD LETTER S IN STEAM CODE WORD TO W.
EXAMPLES: COSLD FOR STEAM BECOMES COWLD FOR WATER
CASLU FOR STEAM BECOMES CAWLU FOR WATER

**FRONT SMOKEBOX AND FRONT HEAD BELOW SMOKEBOX IS INCLUDED.

NOTE 4. IF EXTENDED WATER LEG 7L70 SERIES (PAGES 12-13) IS NOT ORDERED FOR STOKER FIRING, ADDITIONAL FURNACE HEIGHT AND VOLUME REQUIRED BY S. H. B. I. CODE MAY BE PROVIDED IN BASE.



KEWANEE STEEL BOILER

Electric-Weld

TYPE C

FOR OIL OR GAS FRONT-FIRED

Numbers 1773 to 1790

Section showing setting and foundation

SETTING AND BOILER MEASUREMENTS — FRONT FIRED — for oil or gas

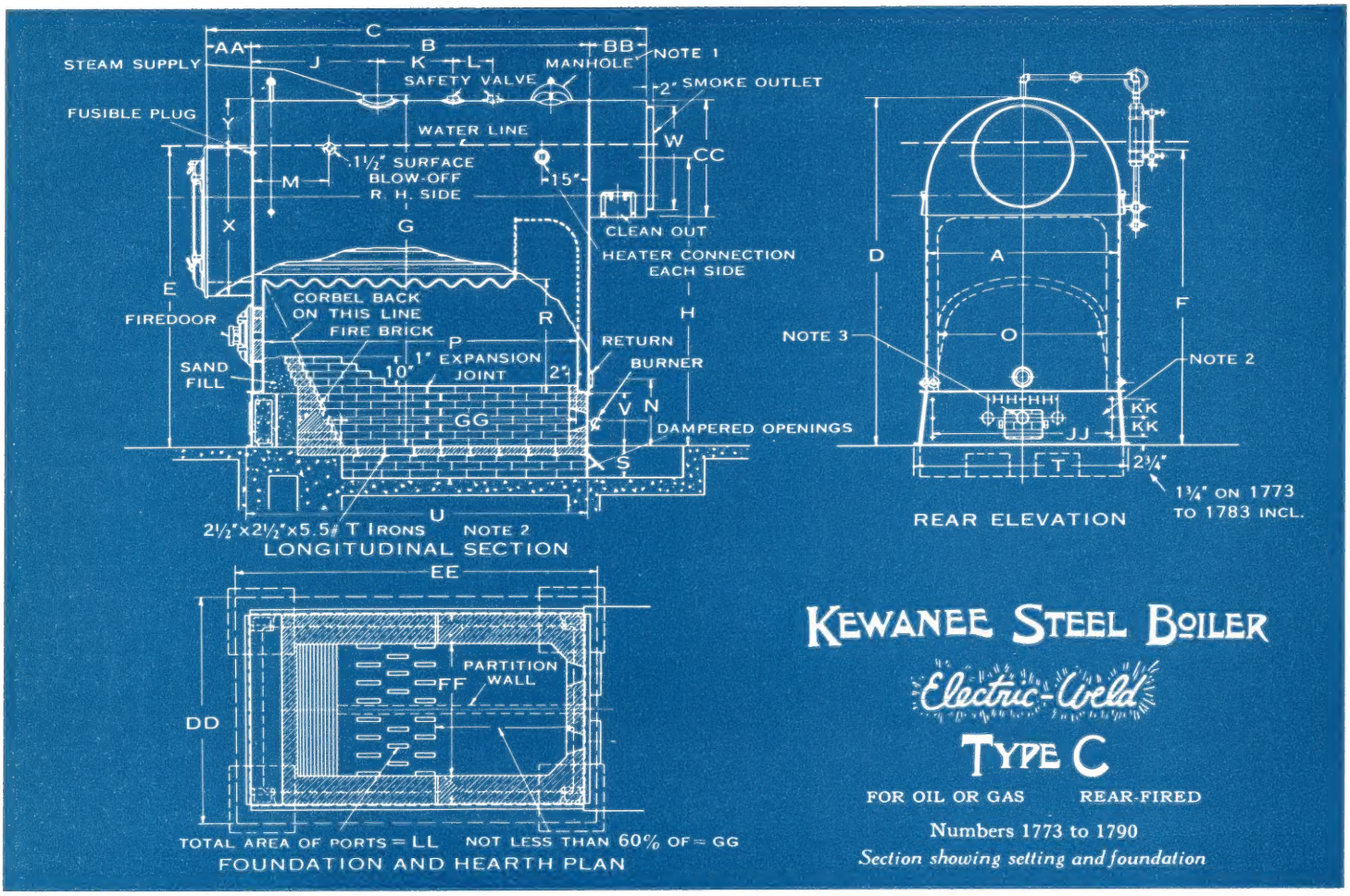
BOILER NUMBER		1773	1774	1775	1776	1777	1778	1779	1780	1781	1782	1783	1784	1785	1786	1787	1788	1789	1790
A—BOILER WIDTH	IN.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—BOILER LENGTH	FT. IN.	4-2	4-8	5-2	6-0½	5-10½	6-6½	7-2	7-2½	8-5	7-8	8-11½	9-2½	9-11½	9-3½	10-6½	11-11½	11-4½	13-1½
C—BOILER LENGTH OVERALL	FT. IN.	5-10½	6-4½	6-10½	7-9	7-10½	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-1½	13-4½	14-9½	14-2½	15-11½
D—BOILER HEIGHT OVERALL	IN.	77½	77½	77½	77½	83½	83½	83½	86½	86½	99	99	108½	112	118	118	122	135	135
E—WATER LINE	IN.	69	69	69	69	72	72	72	73	73	85	85	94	95	101	101	103	114	114
F—WATER COLUMN HEIGHT	IN.	65½	65½	65½	65½	68	68	68	70	70	81	81	90	92	97½	97½	99½	110½	110½
G—STEAM SUPPLY HEIGHT	IN.	79½	79½	79½	79½	85½	85½	85½	88½	88½	101	101	110½	114	120	120	124	137	137
H—SMOKE OUTLET HEIGHT ABOVE FLOOR	IN.	64½	64½	64½	64½	69	69	69	70	70	81½	81½	90½	93	96	96	99	110	110
J—STEAM SUPPLY LOCATION	IN.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—SAFETY VALVE LOCATION	IN.	8½	10	10	10	10	10	11	14	14	13	14	14	14	14	14	14	14	15
L—2ND SAFETY VALVE LOCATION	IN.												12	15	12	10	11	11	12
M—SURFACE BLOW-OFF LOCATION	IN.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—RETURN HEIGHT	IN.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—FIREBOX WIDTH	IN.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
P—FIREBOX LENGTH	IN.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—FIREBOX HEIGHT	IN.	26	26	26	26	29	29	29	30	30	34	34	36	38	40	40	42	42	42
S—PIT DEPTH	IN.				9	9	9	9	10	10	10	10	10	11	11	12	12	13	13
T—BASE WIDTH	IN.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—BASE LENGTH	IN.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—BASE HEIGHT	IN.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—SMOKE OUTLET DIAMETER	IN	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—FRONT SMOKEBOX HEIGHT	IN.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—FRONT SMOKEBOX TOP TO BOILER TOP	IN.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—FRONT SMOKEBOX DEPTH	IN.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—REAR SMOKEBOX DEPTH	IN.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—REAR SMOKEBOX HEIGHT	IN.	26	26	26	26	29	29	29	31½	31½	35	35	36	39	43	43	45½	49½	49½
DD—FOUNDATION WIDTH	IN.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—FOUNDATION LENGTH	IN.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
FF—FURNACE WIDTH	IN.	24	24	24	24	30	30	30	33	33	36	36	42	48	54	54	60	66	66
GG—FURNACE LENGTH	IN.	37	43	46	56	54	58	62	57	69	68	74	76	81	85	92	98	98	110
HH—BURNERS LOCATION	IN.										8½	8½	9½	11	12½	12½	14	15	15
JJ—BOLT CENTERS IN PLATE	IN.	31¼	31¼	31¼	31¼	37¼	37¼	37¼	43¼	43¼	49¾	49¾	55¾	61¾	67¾	67¾	73¾	79¾	79¾
KK—BOLT CENTERS IN PLATE	IN.	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¾	4¾	5¾	5¾	5¾	5¾	5¾	7¾	7¾
*LL—TOTAL AREA PORTS OR OPENINGS	SQ IN.				64	73	83	92	110	127	155	182	230	273	320	365	455	545	640
MM X NN—FIRE DOOR OPENING	IN.	ONE 11 x 16				ONE 12 x 20			ONE 15 x 23		ONE 16 x 30			ONE 16 x 36			TWO 15 x 23		
FIREDOOR STYLE		SINGLE FRAME AND DOOR									SINGLE FRAME AND DOUBLE DOORS						R & L SINGLE FR. & DR.		
SIZE OF DAMPERED OPENINGS	IN.				6 x 11	6 x 12	6 x 14	6 x 16	7 x 16	7 x 18	7 x 22	7 x 26	2-7x16	2-8x17	2-8x20	2-9x20	2-9x25	2-10x27	2-10x32

*PORTS THROUGH HEARTH MAY NOT BE REQUIRED FOR GAS.

NOTE 1: MANHOLE FURNISHED ON BOILER 1782 AND LARGER

NOTE 2: STEEL PLATE WITH DAMPERS AND FOR SPECIAL BURNER MOUNTINGS, ALSO FIRE BRICK LINING AND HEARTH ANGLES NOT FURNISHED BY K. B. CORP

NOTE 3: FOR ONE BURNER ONLY, LOCATE ON CENTER LINE OF BOILER IN 8½ X 11½" OPENING AND USE SINGLE HEARTH PLAN INSTEAD OF DOUBLE



KEWANEE STEEL BOILER

Electric-Weld

TYPE C

FOR OIL OR GAS — REAR-FIRED

Numbers 1773 to 1790

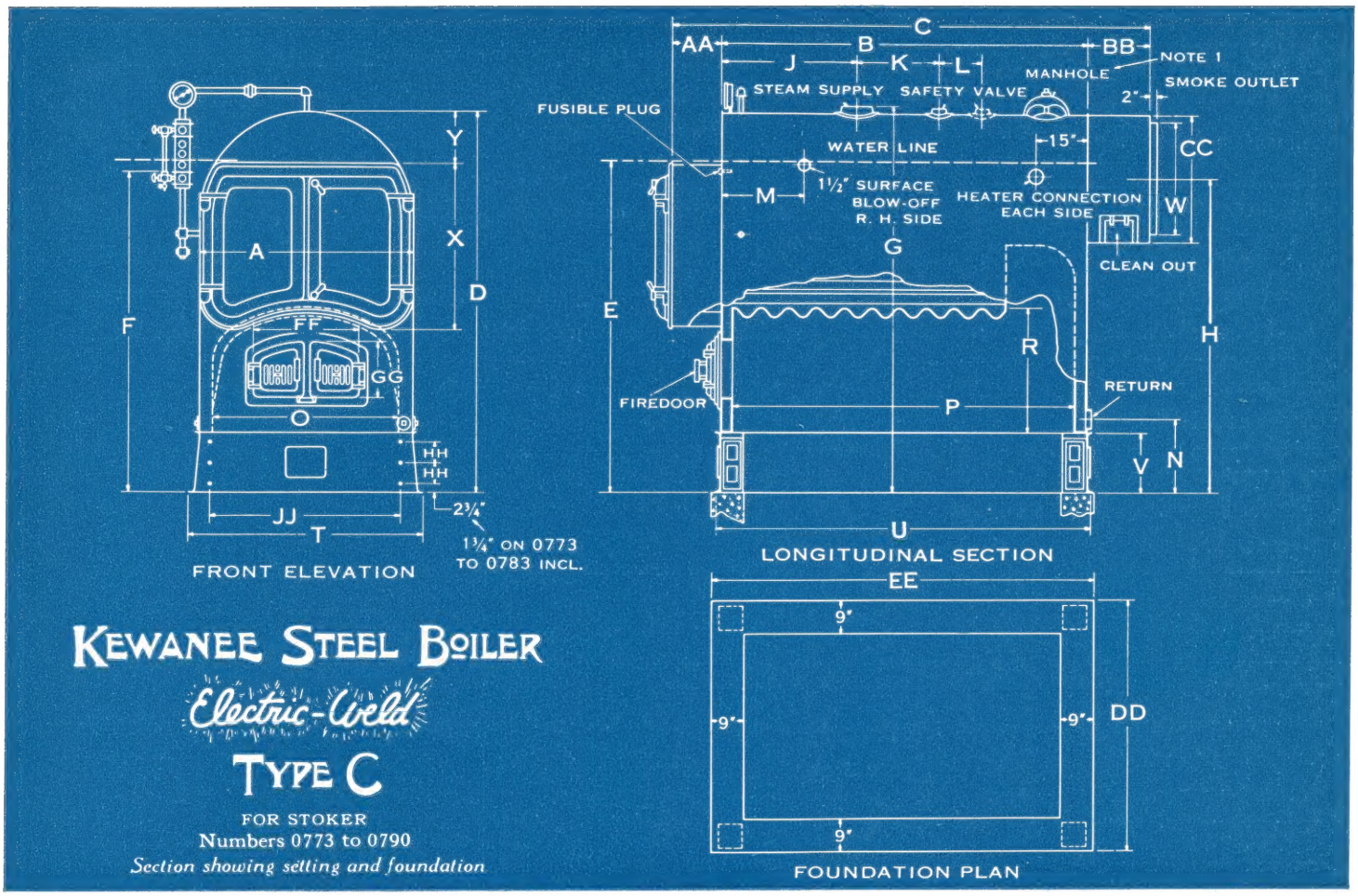
Section showing setting and foundation

SETTING AND BOILER MEASUREMENTS — REAR FIRED — for oil or gas

BOILER NUMBER	1773	1774	1775	1776	1777	1778	1779	1780	1781	1782	1783	1784	1785	1786	1787	1788	1789	1790
A—BOILER WIDTH IN.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—BOILER LENGTH FT. IN.	4-2	4-8	5-2	6-0½	5-10½	6-6½	7-2	7-2½	8-5	7-8	8-11½	9-2½	9-11½	9-3½	10-6½	11-11½	11-4½	13-1½
C—BOILER LENGTH OVERALL FT. IN.	5-10½	6-4½	6-10½	7-9	7-10½	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-1½	13-4½	14-9½	14-2½	15-11½
D—BOILER HEIGHT OVERALL IN.	77½	77½	77½	77½	83½	83½	83½	86½	86½	99	99	108½	112	118	118	122	135	135
E—WATER LINE IN.	69	69	69	69	72	72	72	73	73	85	85	94	95	101	101	103	114	114
F—WATER COLUMN HEIGHT IN.	65½	65½	65½	65½	68	68	68	70	70	81	81	90	92	97½	97½	99½	110½	110½
G—STEAM SUPPLY HEIGHT IN.	79½	79½	79½	79½	85½	85½	85½	88½	88½	101	101	110½	114	120	120	124	137	137
H—SMOKE OUTLET HEIGHT ABOVE FLOOR IN.	64½	64½	64½	64½	69	69	69	70	70	81½	81½	90½	93	96	96	99	110	110
J—STEAM SUPPLY LOCATION IN.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—SAFETY VALVE LOCATION IN.	8½	10	10	10	10	10	11	14	14	13	14	14	14	14	14	14	14	15
L—2ND SAFETY VALVE LOCATION IN.												12	15	12	10	11	11	12
M—SURFACE BLOW-OFF LOCATION IN.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—RETURN HEIGHT IN.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—FIREBOX WIDTH IN.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
P—FIREBOX LENGTH IN.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—FIREBOX HEIGHT IN.	26	26	26	26	29	29	29	30	30	34	34	36	38	40	40	42	42	42
S—PIT DEPTH IN.				9	9	9	9	10	10	10	10	10	11	11	12	12	13	13
T—BASE WIDTH IN.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—BASE LENGTH IN.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—BASE HEIGHT IN.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—SMOKE OUTLET DIAMETER IN.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—FRONT SMOKEBOX HEIGHT IN.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—FRONT SMOKEBOX TOP TO BOILER TOP IN.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—FRONT SMOKEBOX DEPTH IN.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—REAR SMOKEBOX DEPTH IN.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—REAR SMOKEBOX HEIGHT IN.	26	26	26	26	29	29	29	31½	31½	35	35	36	39	43	43	45½	49½	49½
DD—FOUNDATION WIDTH IN.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—FOUNDATION LENGTH IN.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
FF—FURNACE WIDTH IN.	24	24	24	24	30	30	30	33	33	36	36	42	48	54	54	60	66	66
GG—FURNACE LENGTH IN.	37	43	46	56	54	58	62	57	69	68	74	76	81	85	92	98	98	110
HH—BURNERS LOCATION IN.										8½	8½	9½	11	12½	12½	14	15	15
JJ—BOLT CENTERS IN PLATE IN.	31½	31½	31½	31½	37½	37½	37½	43½	43½	49½	49½	55½	61½	67½	67½	73½	79½	79½
KK—BOLT CENTERS IN PLATE IN.	4¾	4¾	4¾	4¾	4½	4½	4½	4½	4½	4½	4½	5½	5½	5½	5½	5½	7½	7½
*LL—TOTAL AREA PORTS OR OPENINGS SQ. IN.				64	73	83	92	110	127	155	182	230	273	320	365	455	545	640
FIRE DOOR OPENING IN.	ONE 11 x 16				ONE 12 x 20			ONE 15 x 23		ONE 16 x 30			ONE 16 x 36			TWO 15 x 23		
FIREDOOR STYLE	SINGLE FRAME AND DOOR									SINGLE FRAME AND DOUBLE DOORS				R & L SINGLE FR. & DR				
SIZE OF DAMPERED OPENINGS IN.	6 x 11				6 x 12	6 x 14	6 x 16	7 x 16	7x 18	7 x 22	7 x 26	2-7x16	2-8x17	2-8x20	2-9x20	2-9x25	2-10x27	2-10x32

*PORTS THROUGH HEARTH MAY NOT BE REQUIRED FOR GAS.

NOTE 1: MANHOLE FURNISHED ON BOILER 1782 AND LARGER.
NOTE 2: STEEL PLATE WITH DAMPERS AND FOR SPECIAL BURNER MOUNTINGS, ALSO FIRE BRICK LINING AND HEARTH ANGLES NOT FURNISHED BY K. B. CORP.
NOTE 3: FOR ONE BURNER ONLY, LOCATE ON CENTER LINE OF BOILER IN 8½ X 11½" OPENING AND USE SINGLE HEARTH PLAN INSTEAD OF DOUBLE.



SETTING AND BOILER MEASUREMENTS

for stoker

BOILER NUMBER		0773	0774	0775	0776	0777	0778	0779	0780	0781	0782	0783	0784	0785	0786	0787	0788	0789	0790
AVERAGE FIREBOX HEIGHT—SEE NOTE 2	IN.	27·9	27·0	26·3	25·4	28·5	28·0	27·6	28·8	28·2	32·7	32·0	34·5	36·5	38·4	37·7	39·2	40·3	39·5
FIREBOX VOLUME ABOVE MUD RING	CU. FT.	21·0	23·2	25·3	29·2	37·9	41·8	45·5	56·0	64·6	77·0	88·7	107·9	138·9	149·2	167·7	216·6	226·6	258·2
PLAN AREA	SQ. FT.	9·1	10·3	11·5	13·8	15·9	17·9	19·8	23·4	27·5	28·2	33·3	37·5	45·7	46·7	53·4	66·3	67·5	78·5
A—BOILER WIDTH	IN.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—BOILER LENGTH	FT. IN.	4–2	4–8	5–2	6–0½	5–10½	6–6½	7–2	7–2½	8–5	7–8	8–11½	9–2½	9–11½	9–3½	10–6½	11–11½	11–4½	13–1½
C—BOILER LENGTH OVERALL	FT. IN.	5–10½	6–4½	6–10½	7–9	7–10½	8–6½	9–2	9–4½	10–7	9–11	11–2½	11–6½	12–3½	12–1½	13–4½	14–9½	14–2½	15–11½
D—BOILER HEIGHT OVERALL	IN.	77½	77½	77½	77½	83½	83½	83½	86½	86½	99	99	108½	112	118	118	122	135	135
E—WATER LINE	IN.	69	69	69	69	72	72	72	73	73	85	85	94	95	101	101	103	114	114
F—WATER COLUMN HEIGHT	IN.	65½	65½	65½	65½	68	68	68	70	70	81	81	90	92	97½	97½	99½	110½	110½
G—STEAM SUPPLY HEIGHT	IN.	79½	79½	79½	79½	85½	85½	85½	88½	88½	101	101	110½	114	120	120	124	137	137
H—SMOKE OUTLET HEIGHT ABOVE FLOOR	IN.	64½	64½	64½	64½	69	69	69	70	70	81½	81½	90½	93	96	96	99	110	110
J—STEAM SUPPLY LOCATION	IN.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—SAFETY VALVE LOCATION	IN.	8½	10	10	10	10	10	11	14	14	13	14	14	14	14	14	14	14	15
L—2ND SAFETY VALVE LOCATION	IN.												12	15	12	10	11	11	12
M—SURFACE BLOW-OFF LOCATION	IN.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—RETURN HEIGHT	IN.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—FIREBOX WIDTH	IN.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
P—FIREBOX LENGTH	IN.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—FIREBOX HEIGHT	IN.	26	26	26	26	29	29	29	30	30	34	34	36	38	40	40	42	42	42
T—BASE WIDTH	IN.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—BASE LENGTH	IN.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—BASE HEIGHT	IN.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—SMOKE OUTLET DIAMETER	IN.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—FRONT SMOKEBOX HEIGHT	IN.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—FRONT SMOKEBOX TOP TO BOILER TOP	IN.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—FRONT SMOKEBOX DEPTH	IN.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—REAR SMOKEBOX DEPTH	IN.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—REAR SMOKEBOX HEIGHT	IN.	26	26	26	26	29	29	29	31	31½	35	35	36	39	43	43	45½	49½	49½
DD—FOUNDATION WIDTH	IN.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—FOUNDATION LENGTH	IN.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
HH—BOLT CENTERS IN PLATE	IN.	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	5¾	5¾	5¾	5¾	5¾	7¾	7¾
JJ—BOLT CENTERS IN PLATE	IN.	31½	31½	31½	31½	37½	37½	37½	43½	43½	49½	49½	55½	61½	67½	67½	73½	79½	79½
GG x FF—FIRE DOOR OPENING	IN.	ONE 11 x 16				ONE 12 x 20			ONE 15 x 23		ONE 16 x 30				ONE 16 x 36			TWO 15 x 23	
FIREDOOR STYLE		SINGLE FRAME AND DOOR									SINGLE FRAME AND DOUBLE DOORS				R&L SINGLE FR. & DR				

NOTE 1: MANHOLE FURNISHED ON BOILER 0782 AND LARGER.

NOTE 2: IF EXTENDED WATER LEG SERIES 7L70 IS NOT ORDERED FOR STOKER FIRING, ADDITIONAL FURNACE HEIGHT & VOLUME REQUIRED BY S. H. B. I. CODE MAY BE PROVIDED IN BASE. HI-FIREBOX BOILER 7L70 SERIES FOR STOKER, SEE PAGES 12-13.

KEWANEE STEEL BOILER TYPE C HI-FIREBOX

SPECIFICATIONS AND DATA
"7L70" SERIES FOR STOKER

BOILER NUMBER — STOKER-FIRED	7L73	7L74	7L75	7L76	7L77	7L78	7L79	7L80	7L81	7L82	7L83	7L84	7L85	7L86	7L87	7L88	7L89	7L90
BOILER NUMBER — HAND-FIRED	27L73	27L74	27L75	27L76	27L77	27L78	27L79	27L80	27L81	27L82	27L83	27L84	27L85	27L86	27L87	27L88	27L89	27L90
CODE WORD STEAM BOILER*	CISLD	CISLE	CISLF	CISLG	CISLH	CISLI	CISLJ	CISLK	CISLL	CISLM	CISLN	CISLO	CISLP	CISLQ	CISLR	CISLS	CISLT	CISLU
RATING—STEAM RADIATION — SQ. FT.	2680	3160	3650	4250	4860	5470	6080	7290	8500	10330	12150	15180	18220	21250	24290	30360	36430	42500
—WATER RADIATION — SQ. FT.	4280	5050	5840	6800	7770	8750	9720	11660	13600	16520	19440	24280	29150	34000	38860	48570	58280	68000
—BTU. PER HOUR — 1000'S	643	758	876	1020	1166	1313	1459	1750	2040	2479	2916	3643	4373	5100	5830	7286	8743	10209
HEATING SURFACE S. H. B. I. MIN. — SQ. FT.	158	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
FURNACE VOLUME S. H. B. I. MIN. — CU. FT.	19.2	22.6	26.1	30.4	34.8	39.1	43.5	52.1	60.8	73.8	86.8	108.5	130.2	151.8	173.5	216.9	260.3	303.6
AVERAGE FIREBOX HEIGHT—SEE NOTE 2. — IN.	33.9	33.0	32.3	31.4	34.5	34.0	34.0	37.8	37.2	42.7	42.4	46.5	48.5	52.4	54.7	58.2	63.5	66.8
FIREBOX VOLUME ABOVE MUD RING. — CU. FT.	25.5	28.3	31.3	36.1	45.8	50.8	56.0	73.5	85.2	100.5	117.4	145.4	184.5	203.7	243.4	321.6	357.2	437.0
PLAN AREA — SQ. FT.	9.1	10.3	11.5	13.8	15.9	17.9	19.8	23.4	27.5	28.2	33.3	37.5	45.7	46.7	53.4	66.3	67.5	78.5
WIDTH OF BOILER — IN.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
LENGTH OF BOILER — IN.	50	56	62	72½	70½	78½	86	86½	101	92	107½	110½	119½	111½	126½	143½	136½	157½
BOILER HEIGHT OVERALL — IN.	82½	82½	82½	82½	88½	88½	88½	94½	94½	108	108	119½	123	131	134	140	157	161
BOILER WIDTH OVERALL — IN.	38	38	38	38	44	44	44	50	50	56	56	62	68¼	74¼	74¼	80¼	86½	86½
BOILER LENGTH OVERALL — FT. IN.	5-10½	6-4½	6-10½	7-9	7-10½	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-1½	13-4½	14-9½	14-2½	15-11½
WATER LINE HEIGHT — IN.	74	74	74	74	77	77	77	81	81	94	94	105	106	114	117	121	136	140
SHIPPING WEIGHT — 7L70 SERIES — LBS.	3100	3500	3900	4400	4900	5400	5800	6700	7600	8800	10000	11800	13600	15300	17000	20100	23200	26100
SHIPPING WEIGHT —27L70 SERIES — LBS.	3600	4000	4500	5100	5600	6200	6700	7800	8800	10200	11500	13600	15700	17600	19500	23200	26700	30200
LENGTH OF FIREBOX — IN.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
WIDTH OF FIREBOX — IN.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
HEIGHT OF FIREBOX — IN.	31	31	31	31	34	34	34	38	38	43	43	47	49	53	56	60	64	68
STEAM SUPPLY SIZE — IN.	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
RETURN INLET SIZE — IN.	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	6	6	6
WATER HEATER CONNECTION SIZE — IN.	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
SAFETY VALVE SIZE — IN.	1½	2	2	2	2	2	2½	2½	2½	3	3	2-2	2-2½	2-2½	2-2½	2-2½	2-3	2-3
BREECHING DIAMETER, ONE BOILER — IN.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
STACK DIAMETER, ONE BOILER — IN.	15	16	16	17	18	19	20	21	22	24	26	28	29	31	33	36	38	40
MIN. HEIGHT OF STACK, ONE BOILER — FT.	35	35	40	45	40	45	50	50	60	55	65	65	70	65	75	90	80	100
BREECHING DIAMETER, TWO BOILERS — IN.	23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
STACK DIAMETER, TWO BOILERS — IN.	21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	52
MIN. HEIGHT OF STACK, TWO BOILERS — FT.	45	45	50	55	50	55	60	60	70	65	75	75	80	75	85	100	90	110
OUTSIDE SURFACE TO COVER ** — SQ. FT.	79	85	93	104	116	125	134	152	170	192	215	245	277	291	327	385	415	463

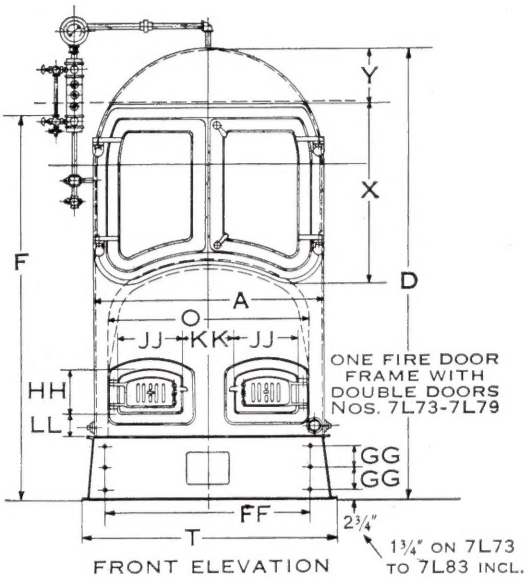
TYPE "C" BOILERS CONFORM TO THE A. S. M. E. BOILER CONSTRUCTION CODE FOR 15 LBS., AND FOR RATING WITH THE S. H. B. I. SIMPLIFIED PRACTICE.

NOTE 2: AVERAGE FIREBOX HEIGHT, COMPUTED BY DIVIDING THE FIREBOX VOLUME BY THE PLAN AREA, COMPLIES WITH S. H. B. I. CODE WHEN STOKER DEAD PLATES ARE LOCATED AT TOP OF MUD RING

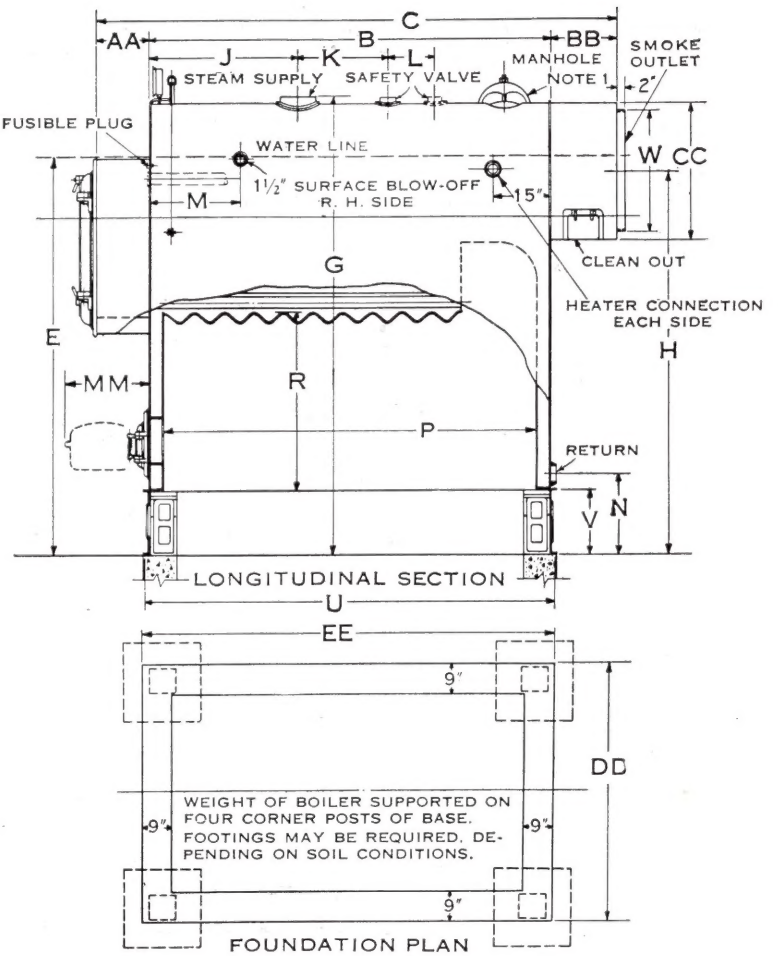
*FOR WATER BOILER CODE WORD CHANGE THIRD LETTER S IN STEAM CODE WORD TO W.
EXAMPLES: CISLD FOR STEAM BECOMES CIWLD FOR WATER
CISLU FOR STEAM BECOMES CIWLU FOR WATER

27L70 SERIES HI-FIREBOX IS FOR HAND-FIRED COAL WITH GRATES. PREFIX HAND-FIRED TO CODE WORD AS: "HAND-FIRED CISLD'

**FRONT SMOKEBOX AND FRONT HEAD BELOW SMOKEBOX IS INCLUDED.



FRONT ELEVATION



KEWANEE STEEL BOILER

Electric-Weld

TYPE C

HI-FIREBOX

Numbers 7L73 to 7L90 for Stoker

Section showing setting and foundation

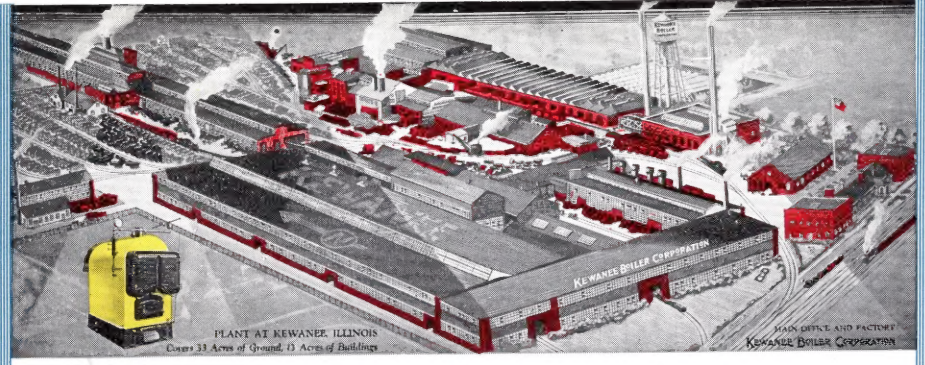
SETTING AND BOILER MEASUREMENTS

Hi-Firebox for Stoker

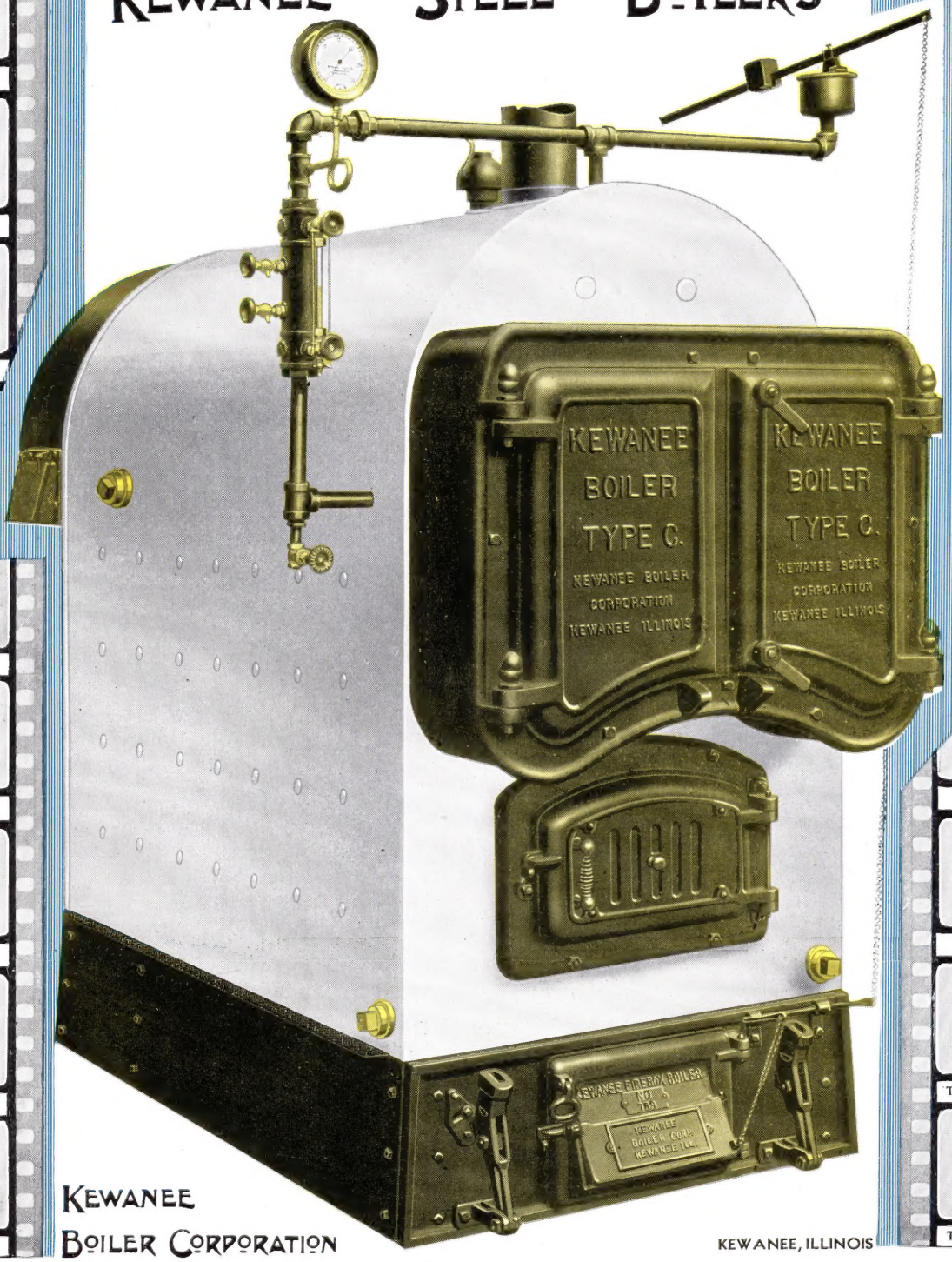
BOILER NUMBER — STOKER-FIRED / *HAND-FIRED	7L73 / 27L73	7L74 / 27L74	7L75 / 27L75	7L76 / 27L76	7L77 / 27L77	7L78 / 27L78	7L79 / 27L79	7L80 / 27L80	7L81 / 27L81	7L82 / 27L82	7L83 / 27L83	7L84 / 27L84	7L85 / 27L85	7L86 / 27L86	7L87 / 27L87	7L88 / 27L88	7L89 / 27L89	7L90 / 27L90
AVERAGE FIREBOX HEIGHT—SEE NOTE 2 . IN.	33.9	33.0	32.3	31.4	34.5	34.0	34.0	37.8	37.2	42.7	42.4	46.5	48.5	52.4	54.7	58.2	63.5	66.8
FIREBOX VOLUME ABOVE MUD RING . CU. FT.	25.5	28.3	31.1	36.1	45.8	50.8	56.0	73.5	85.2	100.5	117.4	145.4	184.5	203.7	243.4	321.6	357.2	437.0
PLAN AREA . . . . . SQ. FT.	9.1	10.3	11.5	13.8	15.9	17.9	19.8	23.4	27.5	28.2	33.3	37.5	45.7	46.7	53.4	66.3	67.5	78.5
A—BOILER WIDTH . . . . . IN.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—BOILER LENGTH . . . . . FT. IN.	4-2	4-8	5-2	6-0½	5-10½	6-6½	7-2	7-2½	8-5	7-8	8-11½	9-2½	9-11½	9-3½	10-6½	11-11½	11-4½	13-1½
C—BOILER LENGTH OVERALL . . . . . FT. IN.	5-10½	6-4½	6-10½	7-9	7-10½	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-1½	13-4½	14-9½	14-2½	15-11½
D—BOILER HEIGHT OVERALL . . . . . IN.	82½	82½	82½	82½	88½	88½	88½	94½	94½	108	108	119½	123	131	134	140	157	161
E—WATER LINE HEIGHT . . . . . IN.	74	74	74	74	77	77	77	81	81	94	94	105	106	114	117	121	136	140
F—WATER COLUMN HEIGHT . . . . . IN.	70½	70½	70½	70½	73	73	73	78	78	90	90	101	103	110½	113½	117½	132½	136½
G—STEAM SUPPLY HEIGHT . . . . . IN.	84½	84½	84½	84½	90½	90½	90½	96½	96½	110	110	121½	125	133	136	142	159	163
H—SMOKE OUTLET HEIGHT ABOVE FLOOR IN.	69½	69½	69½	69½	74	74	74	78	78	90½	90½	101½	104	109	112	117	132	136
J—STEAM SUPPLY LOCATION . . . . . IN.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—SAFETY VALVE LOCATION . . . . . IN.	8½	10	10	10	10	10	11	14	14	13	14	14	14	14	14	14	14	15
L—2ND SAFETY VALVE LOCATION . . . . IN.												12	15	12	10	11	11	12
M—SURFACE BLOW-OFF LOCATION . . . IN.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—RETURN HEIGHT . . . . . IN.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—FIREBOX WIDTH . . . . . IN.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
P—FIREBOX LENGTH . . . . . IN.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—FIREBOX HEIGHT . . . . . IN.	31	31	31	31	34	34	34	38	38	43	43	47	49	53	56	60	64	68
T—BASE WIDTH . . . . . IN.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—BASE LENGTH . . . . . IN.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—BASE HEIGHT . . . . . IN.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—SMOKE OUTLET DIAMETER . . . . IN.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—FRONT SMOKEBOX HEIGHT . . . . IN.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—FRONT SMOKEBOX TOP TO BOILER TOP IN.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—FRONT SMOKEBOX DEPTH . . . . IN.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—REAR SMOKEBOX DEPTH . . . . IN.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—REAR SMOKEBOX HEIGHT . . . . IN.	26	26	26	26	29	29	29	31½	31½	35	35	36	39	43	43	45½	49½	49½
DD—FOUNDATION WIDTH . . . . . IN.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—FOUNDATION LENGTH . . . . . IN.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
FF—BOLT CENTERS IN FRONT PLATE . . IN.	31½	31½	31½	31½	37½	37½	37½	43½	43½	49½	49½	55½	61½	67½	67½	73½	79½	79½
GG—BOLT CENTERS IN FRONT PLATE . . IN.	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	5¾	5¾	5¾	5¾	5¾	7¾	7¾
HH—FIREDOOR HEIGHT . . . . . IN.	13½	13½	13½	13½	13½	13½	13½	11	11	11	11	12	12	12	12	15	15	15
JJ—FIREDOOR WIDTH . . . . . IN.	27½	27½	27½	27½	27½	27½	27½	16	16	16	16	20	20	20	20	23	23	23
KK—SPACE BETWEEN FIREDOORS . . . IN.								7	7	12	12	9	15	20	20	20	26	26
LL—HGT. DOORS FROM BOTTOM OF BOILER IN.	9½	9½	9½	9½	8½	8½	8½	8	8	8	8	8	8	8	8	10	10	10
MM—OPEN FIREDOOR TO BOILER . . . IN.	20	20	20	20	20	20	20	22½	22½	22½	22½	26½	26½	26½	26½	29½	29½	29½

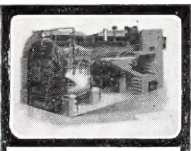
NOTE 1: MANHOLE FURNISHED ON BOILERS 7L82 AND LARGER. *27L70 SERIES HI-FIREBOX IS FOR HAND-FIRED COAL WITH GRATES, AS SHOWN IN DIAGRAM PAGE 5.

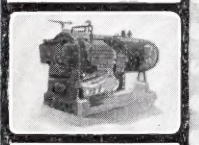
NOTE 2: AVERAGE FIREBOX HEIGHT, COMPUTED BY DIVIDING THE FIREBOX VOLUME BY THE PLAN AREA, COMPLIES WITH S. H. B. I. CODE WHEN STOKER DEAD PLATES ARE LOCATED AT TOP OF MUD RING.



KEWANEE STEEL BOILERS

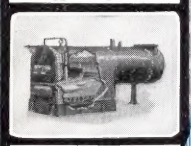



Brickset Up-Draft

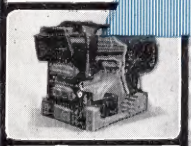

Portable Down-Draft

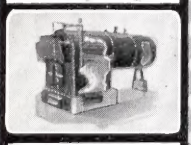

Portable Up-Draft


Type K Up-Draft


Type K Down-Draft


Seri


Series

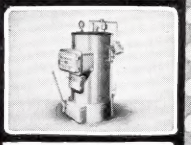

"500" Series


Oil Burning


Residence Type R

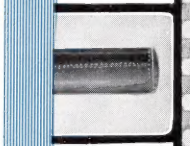

H. R. Tubular


"G" Series


Round "R" Boiler


Surface Burning


o Magazine Feed


ra Heavy Tank


Blow-Off Tank


Air Receiver


Type A Garbage Burner


Type H Garbage Burner

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